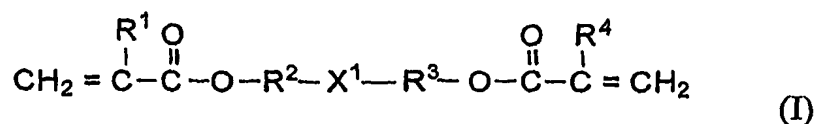


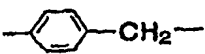
WHAT IS CLAIMED IS:

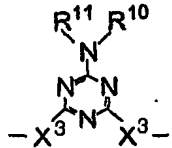
1. A photopolymerizable composition which comprises 1) an acryl- or methacryl-based compound of formula (I), 2) a binder which is a sol-gel solution obtained from a siloxane precursor of formula (II) or a transparent polymeric resin, and 3) a photoinitiator:

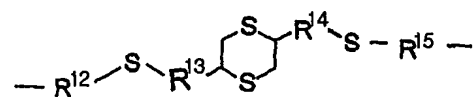


10 wherein:



R^1 and R^4 are each independently hydrogen or CH_3 ;


R^2 and R^3 are each independently R^5 or $(\text{R}^5 - \text{O})_n - \overset{\text{O}}{\underset{||}{\text{C}}} - \text{X}^2 - \text{R}^6$ (R^5 and R^6 are each independently C_{1-10} alkylene, arylene, $-\text{OCH}_2\text{CH}_2-$, $-\text{SCH}_2\text{CH}_2-$ or  $-\text{CH}_2-$); and n is an integer in the range of 1 to 10); and

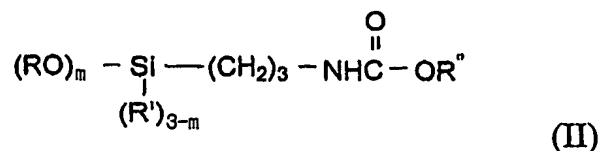
15 X^1 is O, S, SO_2 , $-\overset{\text{O}}{\underset{||}{\text{C}}}-$, $-\overset{\text{S}}{\underset{|}{\text{P}}}-\text{R}^7$, $-\overset{\text{R}^9}{\underset{|}{\text{C}}}-\text{R}^8$,  or



(X^2 and X^3 are each independently O or S;

R^7 is C_{1-10} alkylthioether, phenyl, $-\text{X}^4$ ,  $-\text{X}^5$ or

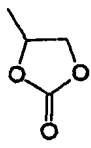
20 $-\text{X}^4$  $-\text{X}^5$; X^4 is O, S, CH_2 or SCH_2 ; X^5 is SCH_3 , OCH_3 or phenyl; R^8 , R^9 , R^{10} and R^{11} are each independently H, C_{1-10} alkyl, C_{3-10} cyclic alkyl, phenyl, benzyl or CF_3 ; and R^{12} , R^{13} , R^{14} and R^{15} are each independently C_{1-10} alkylene).



wherein:

R and R' are each independently C₁₋₁₀ alkyl or phenyl;

R'' is R or -(R-O)_p-Y;

- 5 Y is R', CF₃, SO₂CH₃ or  ;
 p is an integer in the range of 1 to 10; and
 m is 0, 1, 2 or 3.

10 2. The photopolymerizable composition of claim 1 which comprises 1 to 80% by weight of the component 1), 19.99 to 98% by weight of the component 2) and 0.01 to 10% by weight of the component 3).

15 3. The photopolymerizable composition of claim 1, wherein the sol-gel solution is prepared by sol-gel reacting the siloxane precursor of formula (II) and tetraalkoxysilane in the presence of a basic catalyst.

20 4. The photopolymerizable composition of claim 1, wherein the transparent polymeric resin is selected from the group consisting of polyolefins, polystyrenes, polycarbonates, polyurethanes, polysulfones, polyacrylates and mixtures thereof

25 5. The photopolymerizable composition of claim 1 which comprises the transparent polymeric resin as a binder and further comprises at least one solvent which is selected from the group consisting of chloroform, dichloromethane, tetrahydrofuran, N-methylpyrrolidone, methylsulfoxide, N,N-dimethylacetamide, dioxane, alcohols, benzene, ethylene glycol dimethyl ether, acetonitrile and water.

30 6. The photopolymerizable composition of claim 1, wherein the photoinitiator is selected from the group consisting of Irgacure 184, Irgacure

784, a metallocene catalyst, Darocure, acridine, phenazine, quinoxaline and a mixture thereof.

5 7. A photopolymerizable film which is prepared by coating the composition of claim 1 on a substrate and drying the coating at room temperature to 130 °C for 30 min to 14 days.

8. An optical product obtained by irradiating a light to one part or all of the film of claim 7.

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